(19) World Intellectual Property Organization International Bureau



(43) International Publication Date 18 April 2002 (18.04.2002)

PCT

(10) International Publication Number WO~02/31867~A2

(51) International Patent Classification7:

rcı

- (21) International Application Number: PCT/GB01/04430
- (22) International Filing Date: 5 October 2001 (05.10.2001)
- (25) Filing Language:

English

H01L 21/02

(26) Publication Language:

English

(30) Priority Data:

09/686,742

11 October 2000 (11.10.2000) US

- (71) Applicant: INTERNATIONAL BUSINESS MA-CHINES CORPORATION [US/US]; New Orchard Road, Armonk, NY 10504 (US).
- (71) Applicant (for MG only): IBM UNITED KINGDOM LIMITED [GB/GB]; P.O. Box 41, North Harbour, Portsmouth, Hampshire PO6 3AU (GB).
- (72) Inventors: CABRAL, Cyril, Jr.; 4 Sherman Place, Ossining, NY 10562 (US). CLEVENGER, Lawrence; 90 Andrews Road, LaGrangeville, NY 12540 (US). HSU, Louis, Lu-Chen; 7 Crosby Court, Fishkill, NY 12524 (US). WONG, Kwong, Hon; 42 Mina Drive, Wappingers Falls, NY 12590 (US).
- (74) Agent: RICHARDS, John, Peter; IBM United Kingdom Limited, Intellectual Property Law, Hursley Park, Winchester, Hampshire SO21 2JN (GB).

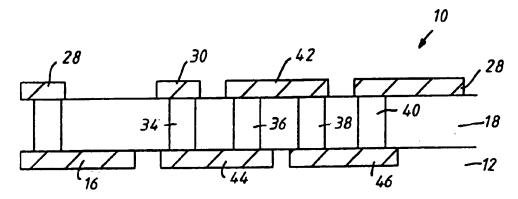
- (81) Designated States (national): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NO, NZ, PH, PL, PT, RO, RU, SD, SE, SG, SI, SK, SL, TJ, TM, TR, TT, TZ, UA, UG, UZ, VN, YU, ZA, ZW.
- (84) Designated States (regional): ARIPO patent (GH, GM, KE, LS, MW, MZ, SD, SL, SZ, TZ, UG, ZW), Eurasian patent (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European patent (AT, BE, CH, CY, DE, DK, ES, FI, FR, GB, GR, IE, IT, LU, MC, NL, PT, SE, TR), OAPI patent (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Published:

- without international search report and to be republished upon receipt of that report
- entirely in electronic form (except for this front page) and available upon request from the International Bureau

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

(54) Title: ELECTRONIC STRUCTURE HAVING IN-SITU RESISTORS



(57) Abstract: Electronic structure that has in-situ formed resistors consists of a first plurality of conductive elements formed in an insulating material layer, a plurality of electrically resistive vias formed on top and in electrical communication with at least one of the first plurality of conductive elements, and a second plurality of conductive elements formed on top of and in electrical communication with at least one of the plurality of electrically resistive vias. The structure may further be formed in a multi-level configuration such that multi-level resistors may be connected in-series to provide larger resistance values. The structure may be combined with a capacitor network to form RC circuits.